UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/632,081	07/30/2003	Isaac Farr	10019128-1	2201

22879 7590 09/07/2006

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER	
LIANG, LEONARD S	
ART UNIT	**PAPER NUMBER**
2853	

DATE MAILED: 09/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/632,081	FARR, ISAAC	
	Examiner	Art Unit	
	Leonard S. Liang	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 June 2006 and 13 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-9,16,18-22,24 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-9,16,18-22,24 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

This application contains claims 5-9, 16, 18-22, 24, and 29 drawn to an invention nonelected with traverse in the response to election/restriction filed on 06/26/06. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01. The applicant argues, "As noted on page 10, lines 24-26 of applicant's originally-filed application, '[a]lthough the conductive coatings are described below in the context of electrode 32, it will be appreciated that the discussion also applies to electrodes 32', 32" and 32"' of Fig. 3.'" While this may be true, the examiner notes that the different conductive coatings were not the reason for the previous restriction/election requirement. The reason for the previous election/restriction requirement was that in the response filed on 03/13/06, the applicant amended the claims to recite an electrode with a hollow interior that the printing fluid passes through. This limitation was not supported by all the figures. For example, figure 6 clearly does not show an electrode with a hollow interior. For this reason, an election/restriction requirement was made for the purposes of clarifying the record. Even though the following rejection below is responsive to the response to election/restriction filed on 06/26/06, it will be made final because the new rejection is based on the after-non-final claim amendments made by the applicant on 03/13/06.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

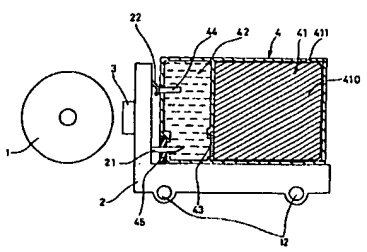
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5-6, 9, 16, 18-20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochi et al (US Pat 6286921) in view of Kumada et al (U Pat 5097248).

Ochi et al discloses:

- {claims 5-6, 9, 18, 20, 24} A printing device configured to print a printing fluid onto a printing medium (figure 9); a printing fluid reservoir configured to hold a volume of the printing fluid (figure 9, reference 42); a print head assembly configured to transfer the printing fluid to the printing medium, wherein the print head assembly is fluidically connected to the printing fluid reservoir (figure 9, reference 3); a printing fluid detector configured to detect a characteristic of the printing fluid, wherein the printing fluid detector includes a first electrode and a second electrode configured to be in contact with the printing fluid, wherein at least one of the first electrode and the second electrode provides a hollow interior that the printing fluid passes through (figure 9, reference 21, 44; column 8, line 55- column 9, line 2; column 9, lines 39-41)

FIG.9



Ochi et al differs from the claimed invention in that it does not disclose:

- {claim 5} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating disposed over an electrically conductive substrate, and wherein the electrically conductive coating is permeable to printing fluid and is configured to increase the effective surface area of the electrode accessible to the printing fluid
- {claim 6} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating made at least partially from an electrically conductive polymer, and disposed over an electrically conductive substrate
- {claim 9} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating resistant to corrosion by printing fluid disposed over an electrically conductive substrate
- {claim 16} wherein the electrically conductive coating is a protective polymer coating, further comprising a printing fluid-permeable electrically conductive polymer coating disposed over the protective polymer coating
- {claim 18} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating permaeable to printing fluid disposed over an electrically conductive substrate, and wherein the electrically conductive coating includes a plurality of interior surfaces contactable by the printing fluid
- {claim 19} wherein the electrically conductive coating is porous
- {claim 20} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating at least partially made of a polymer,

permeable to printing fluid with the electrically conductive coating being disposed over an electrically conductive substrate

- {claim 24} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating disposed over an electrically conductive substrate; and an electrically conductive protective coating disposed between the electrically conductive substrate and the electrically conductive coating permeable to printing fluid, wherein the coating is at least partially made of a TEFLON material

Kumada et al discloses:

- {claim 5} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating disposed over an electrically conductive substrate, and wherein the electrically conductive coating is permeable to printing fluid and is configured to increase the effective surface area of the electrode accessible to the printing fluid (column 2, line 31 – column 3, line 22)
- {claim 6} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating made at least partially from an electrically conductive polymer, and disposed over an electrically conductive substrate (column 2, line 31 – column 3, line 22)
- {claim 9} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating resistant to corrosion by printing fluid

disposed over an electrically conductive substrate (column 2, line 31 – column 3, line 22)

- {claim 16} wherein the electrically conductive coating is a protective polymer coating, further comprising a printing fluid-permeable electrically conductive polymer coating disposed over the protective polymer coating (column 2, line 31 – column 3, line 22)
- {claim 18} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating permaeable to printing fluid disposed over an electrically conductive substrate, and wherein the electrically conductive coating includes a plurality of interior surfaces contactable by the printing fluid
- {claim 19} wherein the electrically conductive coating is porous (column 2, line 31 – column 3, line 22)
- {claim 20} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating at least partially made of a polymer, permeable to printing fluid with the electrically conductive coating being disposed over an electrically conductive substrate (column 2, line 31 – column 3, line 22)
- {claim 24} wherein at least one of the first electrode and the second electrode includes an electrically conductive coating disposed over an electrically conductive substrate; and an electrically conductive protective coating disposed between the electrically conductive substrate and the electrically conductive

coating permeable to printing fluid, wherein the coating is at least partially made of a TEFLON material (column 2, line 31 – column 3, line 22)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Kumada et al into the invention of Ochi et al. The motivation for the skilled artisan in doing so is to gain the benefit of protecting the electrodes.

Claims 7-8, 21-22, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ochi et al (US Pat 6286921) in view of Kumada et al (U Pat 5097248), as applied to claims 5-6, 9, 16, 18-20, and 24 above, and further in view of Pichler (US Pat 6936761).

Ochi et al, as modified, teaches all limitations of the claimed invention except for the following:

- {claims 7, 21, and 29} wherein the electrically conductive polymer is selected from the group of electrically conductive polymers consisting of polypryrroles, polyanilines, polythiophenes, conjugated bithiazoles and bis-(thienyl bithiazoles)
- {claims 8 and 22} wherein the electrically conductive polymer is cross-linked

Pichler discloses:

- {claims 7, 21, and 29} wherein the electrically conductive polymer is selected from the group of electrically conductive polymers consisting of polypryrroles, polyanilines, polythiophenes, conjugated bithiazoles and bis-(thienyl bithiazoles) (column 6, line 57 – column 7, line 24)

- {claims 8 and 22} wherein the electrically conductive polymer is cross-linked (column 6, line 57 – column 7, line 24)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Pichler into the invention of modified Ochi et al. The motivation for the skilled artisan in doing so is to gain the benefit of forming a strong electrically conductive polymeric coating.

Response to Arguments

Applicant's arguments with respect to claims 5-9, 16, 18-22, 24, and 29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Allen (US Pat 4973993) discloses ink-quantity and low ink sensing for ink-jet printers.

Kono (US PgPub 20020109758) discloses an ink supply mechanism and ink jet recording apparatus.

Yamamoto et al (US Pat 6871925) discloses an inkjet printing apparatus, control method therefor, and program.

Mochizuki et al (JP Pat 04282256 A) discloses an ink jet recording device.

Ochi et al (JP Pat 06286160 A) discloses a recorder.

Mochizuki et al (JP Pat 04244853 A) discloses an ink jet recording apparatus.

Applicant's amendment filed on 03/13/06 necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S. Liang whose telephone number is (571) 272-2148. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

09/02/06
lsl LSL

STEPHEN MEIER
SUPERVISORY PATENT EXAMINER